

Remarks

1. 35 U.S.C. §112, 2nd paragraph.

i) Claims 1, 18 and 24 have been amended to replace the term "*connected closer in said communication network to said one of the entities than the middlebox control node*" to "*located in a control signal path from said one of the entities to the middlebox control node*". Basis for this amendment can be found in figures 2, 4 & 6 and supported by the corresponding description for these figures and particularly by page 14, lines 6 to 10.

It is respectfully submitted that the replacement wording distinctly defines the claimed subject matter in a manner that leaves no ambiguity.

ii) Claims 1, 18 and 25 have been amended to replace the term "*to enable said middlebox control node to control said middlebox*" by "*to enable said middlebox control node to send middlebox control messages to said middlebox*". Basis for this amendment can be found at page 11, lines 11 to 13.

It is respectfully submitted that the replacement wording satisfies the requirements of §112, 2nd paragraph.

2. 35 U.S.C. §101.

Claims 21 and 22 have been cancelled.

3. 25 U.S.C. §103(a).

Considering claim 1 in light of the Examiner's rejection of this claim under 35 U.S.C. §103(a) over the combination of Schuster, Huitema and Handley and separately over the combination of Xu, Huitema and Handley, the Examiner will note that, in addition to the amendments made to this claim to address the 35 U.S.C. §112, 2nd paragraph rejections, this claim has also been amended to include the feature that the middlebox control node is located in a different address realm than that of the one of the entities associated with the control message. Basis from this amendment is found in figures 2, 4 and 6 and their corresponding descriptions. See, for example, figure 2 where the call server 18 (middlebox control node) is located above address realm 3 and the entity is located in address realm 1.

It is the Examiner's position that each of Schuster and Xu teach most of the features of claim 1 as previously presented except for disclosing a middlebox. However, this feature is taught by Huitema and, in the Examiner's opinion, a skilled person would be motivated to combine these references to arrive at the arrangement of claim 1 as previously presented therefore rendering this claim obvious.

Applicants have therefore amended claim 1 as aforesaid to limit the present invention as now defined by new claim 1 to the feature that the middlebox control node is located in a different address realm to that of the said one of the entities.

The Examiner will readily appreciate that Huitema makes it absolutely clear that the MIDCOM protocol concerns the interoperation of an internal host ("said one of the entities"), an internal server (the middlebox control node) and a firewall/NAT (the middlebox and middlebox identity providing node) all within a single address realm where the firewall/NAT is the link to an external address realm (see Huitema section 2 and particularly section 2.3 and 2.3.1). In other words, the middlebox control node as taught by Huitema must always exist in the same address realm as the entity associated with the control message that is used by the middlebox identity providing node to determine the identity of the middlebox. Therefore, a combination of

Schuster and Huitema or a combination of Xu and Huitema cannot disclose not suggest all of the claims limitations of claim 1 as now presented. Even if it is argued that Xu, in contrast to Schuster, does disclose a proxy server outside the address realm of the entity associated with the control message, it is clear that Huitema addresses the interoperation of an entity, a proxy server and a firewall/NAT within a single address realm and is not applicable to a situation where any of such devices are located in a different address realm. In Huitema, the internal server (middlebox control node) must be behind the firewall/NAT within the same single address realm.

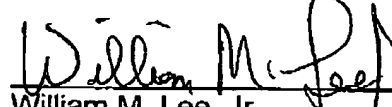
While the present invention may employ the MIDCOM protocol, the invention is concerned with using a middlebox control node (an external proxy server/call server for example) in one address realm to control a middlebox (NAT) connected to an entity (IP phone for example) in another address realm using middlebox identity providing nodes located somewhere in a control path between the entity and the middlebox control node but not at the middlebox control node since the middlebox identity providing node is separate from the middlebox control node. This has the advantage that determining the identity of a middlebox is distributed throughout the communications network in any of its address realms thus negating the need for the middlebox control node to maintain a table or database of the identities of all middleboxes in the communications network.

4. The foregoing submission is relevant to other amended independent claims as presented herein.

5. In view of the foregoing, it is respectfully submitted that this application is now in condition for allowance.

October 11, 2005

Respectfully submitted,



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